PIEZOELECTRIC CERAMIC COMPOSITION AND PIEZOELECTRIC ELEMENT

ABSTRACT OF THE DISCLOSURE

A piezoelectric ceramic composition is expressed by the formula $Pb_{\alpha}[\{Ni_{w/3}Nb_{1-(w/3)}\}_xTi_yZr_z]O_3$. The B site variables x, y, and z lie in a predetermined region in a ternary diagram. The Ni-Nb molar proportion variable satisfies the relationship $0.85 \leq w < 1.00$. The Pb molar content α is reduced from the stoichiometric ratio to a value satisfying the relationship $0.950 \leq \alpha \leq 0.995$. At least one element selected from the group consisting of Sr, Ca, and Ba may be substituted for about 10 mol percent of the Pb .